

# "The Influence of Investor Psychology on Regret Aversion"

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## Abstract

Financial Theories say that Investor should act rationally. Emotions do have a powerful impact on everyday decisions we make. They not only shape behavior but also affect every decision taken by an individual. Similarly regret is the most common phenomena observed in individuals especially when they take investing decisions. In the present study researchers have tried to find out influence of Investor Psychology on Regret Aversion by using General Linear Model. The results are useful in Indian context.

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**Index terms**— regret aversion, risk, investor psychology.

## 1 I. Introduction

Due to the Liberalization, Globalization and Privatization financial sector is also progressive at a very fast pace and due to which question arising is of what is the effect the investors' psychology on the regret aversion. It is very difficult for investor to take decision and survive in this highly competitive economic world as well as for organizations coming up with financial products. If they are unable to comprehend the investor psychology on regret aversion, they will fail.

The Investor psychology is the scientific study of investor mind and behavior. Psychology is the study of the human brain including people's behaviors, attitudes, feelings and personality. Investors, like any decision maker, feel regret when they compare the outcome of an investment with what the outcome would have been they invested differently. To take any good decision investor check positives and negatives of each option, and consider all the alternatives.

Regret Aversion in simple words is the trend to avoid making decision due to the fear of experiencing the hurt of regrets. Investor avoid taking decisive actions due to regret aversion because they fear that, in perception, whatever course they select will prove less than optimal. Essentially, this bias seeks to forestall the pain of regret associated with poor decision making. There is a role of regret aversion in decision making. Specifically, it examines how regret aversion influences decision process, choice, and post-decisional behaviors and feelings most investors are familiar with the painful pangs of regret resulting from negative Consequences of a decision, such as receiving a bad grade after not studying, losing money after making a stupid investment, or feeling frustrated after taking the wrong decision about investment. Regret is considered an important negative emotion.

This research focuses on influence of investor psychology on regret aversion. This study examined investors' decisions to realize gains and losses in the any kind of financial decision they make. Specifically, the attention is focused on the different gender, age, qualification and Income.

## 2 II. Regret Aversion

Bell, Loomes & Sugden (1982) came up with very first definition of regret aversion and said that it motivates individuals to engage in decision behaviors and choices that avoid future regret, for example, by choosing the option for which the least regret is expected. Later, Shefrin and Statman (1985) suggested that regret aversion is an emotional feeling associated with the ex post knowledge that a different past decision would have fared better than the one chosen, as one of the factors leading to the disposition effect. Samuelson and Zeckhauser (1988) said regret aversion refers to the phenomenon that people keep the status quo because they know from experience

that options that seem to be favorable given the apparently correct information at the time the decision is to be made, may later turn out to be less favorable than previously assumed.

Baber and ??dean (1999) suggested investors want to avoid regret. When investors hold the paper gains stock, investors worry about the stock price will fall, so investors sell paper gains stock to become realized gains. Conversely, when investors ride the paper losses stock, investors will expect the stock price will go up in the future, so they will ride the loss stock. Regret Aversion can be only put as the tendency to avoid making decision due to the fear of experiencing the pain of regrets. People demonstrate regret aversion avoid taking decisive actions because they fear that, in hindsight, whatever course they select will prove less than optimal. Essentially, this bias seeks to forestall the pain of regret associated with poor decision making. Each word has its own meaning.

### 3 III. Relationship between Disposition

Effect and Regret Aversion Shiller (2000) argued that regret theory may apparently help explaining the fact that investors defer the selling of stocks that have gone down in value and accelerate the selling of stocks that have going up in value. Since the fear of regret leads investors to postpone losses, symmetrically, the desire for pride leads to the realization of gains. In short it can be inferred that investors might feel regret when they realize a loss, and, conversely, feel pride when they realize a paper gains.

### 4 IV. Investor Psychology

Elliott (1930) developed the Elliott wave theory.

Through use of sophisticated measurements that he called "wave counting," a wave theorist could forecast market turns with a high degree of accuracy. Further, Sun1 and Hsiao (1983) proposed Prospect Theory.

Prospect theory to explain how decision makers actually behave when confronted with choice under uncertainty and formalizes an S-shaped value function to substitute for expected utility function of expected utility theory.

Weber & Camerer (1998) found evidence of disposition affect in experimental market by pooling investor responses and analyzing buy and sale trends of sis risky assets. They argued that this was a construct of investor being risk averse with winnings, and risk seeking with losses with the purchase price as the reference point.

Traditional economic modeling assumes that people make decisions rationally, taking into account all available information (adjusted for the cost of gathering and analyzing the information). However, increasing evidence suggests that people's decision making is influenced by certain behavioral biases and has led to a growing body of work investigating the impact of these biases on financial markets.

The impact of psychology can be clearly seen in investor behavior, such as "herding". This can lead to bubbles and crashes and fear of regret, for example, where investors avoid selling a poorly performing investment because they do not want to admit to having made a bad decision to begin with.

### 5 V. Relationship between Investor Psychology and Regret Aversion

Investor psychology is the mental conflict that people experience when they are presented with evidence that their beliefs or assumptions are wrong; as such, cognitive dissonance might be classified as a sort of pain of regret, regret over mistaken beliefs. As with regret theory, the theory of regret aversion goes parallel. Festinger (1957) asserts that there is a tendency for people to take actions to reduce cognitive dissonance that would not normally be considered fully rational: the person may avoid the new information or develop contorted arguments to maintain the beliefs or assumptions. There is empirical support that people often make the errors represented by the theory of cognitive dissonance. McFadden (1974) modeled the effect of cognitive dissonance in terms of a probability of forgetting contrary evidence and showed how this probability will ultimately distort subjective probabilities.

Goetzmann and Peles (1993) have argued that the same theory of cognitive dissonance could explain the observed phenomenon that money flows in more rapidly to mutual funds that have performed extremely well than flows out from mutual funds that have performed extremely poorly: investors in losing funds are unwilling to confront the evidence that they made a bad investment by selling their investments.

### 6 VI. Literature Review

Recent literature in empirical finance is surveyed in its relation to underlying behavioral principles, principles which come primarily from psychology, sociology and anthropology. In a study of verbal expressions of emotions, Shimanoff (1984) found that regret was the most frequently named negative emotion, attitudes toward regret are mainly favorable versus unfavorable, whether individuals are self-serving in their ascription of regret experiences, and which beneficial functions people ascribe to regret versus other negative emotions. Although previous research has offered comparative profiles of various specific emotions in terms of psychology, intensity, or duration the present research is the first to benchmark regret against other common emotions in terms of these basic evaluations.

Lankman ??1993) Shefrin and Statman, (1985) examined the influences of overconfidence, mental accounting, regret aversion and self-control on the disposition effect of selling winners too early and holding losers too long.

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The findings show that (1) overconfidence, mental accounting and self-control positively influence the disposition effect, and (2) self-control negatively influences the disposition effect. As predicted, self control can reduce irrational behavior of investor. Zeelenberg (1999b) and Roese (2005) found regret can tell us that we could have done better by choosing a different option. The regret experienced after trusting an untrustworthy leader, losing money in a phony investment, cheating on one's spouse, or not blowing the whistle about corporate wrong -doing is likely to increase the probability of better choices in the future. By making better choices, in turn, decision makers should experience less regret. Thus, being willing to experience regret in the short -run might lead to better choices and less future regret. Simonson (1989); Slavic (1975) studied the effects of decision making and explained as the result of decision makers, tendency to make easily justifiable reason-based choices. All violate certain normative principles of choice. However, as a pretest showed, the justifications underlying the effects are not all are considered equally unreasonable.

Janis and Mann (1977) said that anticipatory regret might again lead to increased information purchase and, as a consequence, lead to worse overall monetary payoffs. The results show that making regret salient led to less rather than more information search under these conditions. It appears, then, that anticipatory regret did not lead to "mindless" information collection with the purpose of providing a justification that could protect the decision maker if the choice outcome turned out to be bad. Bell, Loomes & Sugden, (1982) Zeelenberg (1999) said that investor psychology is the pre-choice decision process. The results told that increasing anticipatory regret can, in some circumstances, lead to better, more heedful decision making.

Larrick & Boles (1995) suggested that decision makers' tendency to seek feedback is actually much stronger than the tendency to avoid feedback when both options are equally effortless and costless to implement and regret is not particularly salient. However, once regret is more salient, feedback avoidance increases substantially and bad decision making increases as well.

Subash (2011/2012) founds investors who are participating in the Indian Stock Market is rational at all times. The work focuses on nine identified behavioral biases, namely: Overconfidence, Representativeness, Herding, Anchoring, Cognitive Dissonance, Regret Aversion, Gamblers' Fallacy, Mental Accounting and Hindsight Bias. Effects of these nine factors on the decision making process of portfolio investors in Kerala, India has been analyzed in this study. The influence has primarily been analyzed in terms of whether behavioral factors affect the investors' decision to buy sell or hold stocks.

Barber and Odean (2001) partitioned investors based on gender and, based on the previous psychological research fact that men are more overconfident than women, tested the theory that overconfident investors trade excessively. They document that men trade 45% more than women, and find that men's net returns were cut by 2.5% a year while it was 1.72% for women, in data gathered from 1991 through 1997. Samuelson and Zeckhauser (1988) said regret aversion is closely linked to the theory of omission bias, which holds that people perceive harmful commissions as worse than corresponding omissions and, therefore, prefer omission to commission.

Ritov and Baron (1992) said selection of an alternative also means commitment to the alternative. Psychological commitment claims behavior on behalf of a position, as a change may damage self-esteem. When a poor decision is undeniable to ourselves, the natural survival instinct is to downplay the importance of the event or change the way we think about the outcome altogether. That is, we change the reference point from which the outcome is evaluated.

Wang, Zhou, Chan, and Chau (2000) demonstrated that developers become over-confident and that their over-confidence leads to over-building. These actions are found to cause excessive volatility in the real estate sector and even affect real estate cycles.

Hirshleifer, Subrahmanyam, & Titman (1994) experimental and empirical evidence show individual in groups abides the group decision, even when they perceive the group to be wrong. Individual suppresses their own beliefs and relies on their investment decision solely on the collective action, even though they disagree with the prediction.

## 7 Global Journal of Management and Business Research

Volume XV Issue II Version I Year ( ) C Savage's (1951) told that regret rule for decision making under ignorance. The absence of any knowledge about the probabilities with which different states of the world occur and that was perhaps the first formulation of a decision rule that seeks to minimize the regret for having chosen the relatively worse option. Zeelenberg (2002) found further direct evidence for the role of having good reasons for one's choice.

They studied regret after consumer decisions based on more or less convincing reasons and found that regret was more intense after unreasonable choices such as switching to a different product when the product performed well in the past, or not switching when it performed badly. Reb and Connolly (2005) justified of the decision process may be of even stronger importance for the experience of regret. In the series of scenariobased studies, tested the effect of decision process quality on anticipated regret.

Based on the above extensive review of literature the objectives of the study were formulated to carry out a study on Investor Psychology and Regret Aversion in Indian context. The review was used as base for questionnaire preparation too.

VII. Objectives 1. To design, develop and standardize a measure to evaluate Investor Psychology. 2. To design, develop and standardize a measure to evaluate Regret Aversion.

## 8 To find out the underlying factors of Investor

Psychology and Regret Aversion. 4. To find out differences between male and female Investors on Psychology and Regret Aversion. 5. To find out the causal relationship between Investor Psychology and Regret Aversion. 6. To open new vistas for further study.

## 9 VIII. Research Methodology

The study was exploratory in nature and survey was used to complete it. Population subsumed the entire Investors of Gwalior region. Since there was no list of existing investors of Gwalior region, no sampling X. Tools used for Data Analysis

## 10 IX. Tools used for Data Collection

For the purpose of data collection, a standardized questionnaire was used as a base (Marcatto and Ferrante, 2008). The same was restandardized again in Indian context. Responses were solicited on Likert-type scale 1 to 5, where 1 stands for minimum agreement and 5 stands for maximum agreement would be used.

## 11 Reliability Statistics of Regret Aversion

## 12 KMO and Bartlett's Test

Further KMO Bartlett's test was used for sample adequacy. The results are discussed in table below.

The Kaiser Meyer Olkin Measure of Sampling Adequacy value was 0.718 indicating that the sample was adequate to consider the data as normally distributed. The Bartlett's Test of Sphericity tests the null hypothesis that the item-to-item correlation matrix was an identity matrix. The hypothesis was tested through c) Chi-Square test; the value of Chi-square was found to be 1242.851, which is significant at 0% level of significance. Therefore, null hypothesis is rejected; indicating that the item-to-item correlation matrix is not an identity matrix and is therefore suitable for factor analysis.

Principle component factor analysis with Varimax rotation and Kaiser Normalization was applied. The factor analysis resulted in 4 The Kaiser Meyer Olkin Measure of Sampling Adequacy value was 0.737 indicating that the sample was adequate to consider the data as normally distributed. The Bartlett's Test of Sphericity tests the null hypothesis that the item-to-item correlation matrix was an identity matrix. The hypothesis was tested through Chi-Square test; the value of Chi-square was found to be 283.761, which is significant at 0% level of significance. Therefore, null hypothesis is rejected; indicating that the item-to-item correlation matrix is not an identity matrix and is therefore suitable for factor analysis. R-20. I am always prepared to take a gamble.

. the assumption of homogeneity of covariance across the groups using  $p < .001$  as a criterion. Here, we do not have a concern -as Box's M (84.79) was not significant,  $p (.072) > (.001)$  -indicating that there are no significant differences between the covariance matrices. Therefore, the assumption is not violated and Wilk's Lambda is an appropriate test to use.

The following is the MANOVA using the Wilk's Lambda test.

Using an alpha level of .00, we see that this test is significant, Wilk's = .014. This significant F indicates that there are significant differences among the age gender, income, groups on a linear combination of the investor psychology and regret aversion. We see that there are three functions age, gender, income; are significant in examining group differences. With our univariate F-tests, we identify the insignificant variables. When it comes to finding out differences among various sub categories of age, income and gender, we see the differences are insignificant.

## 13 XII. Interpreting the Post hoc Test for Age

The MULTIPLE COMPARISONS table is showing the results for the Tukey HSD and the LSD follow-up tests. Since the assumption of homogeneity of variance was met in our example -we only need to review the Tukey HSD information. The information for the LSD can be ignored at this time.

The Tukey HSD tests the null hypothesis that the two means are equal.

At first glance, this table is rather intimidating however, there is only certain pieces of data that we need to make our conclusion. We can see that the mean of age category (I) 25-35 The MULTIPLE COMPARISONS table (in our example) is showing the results for the Tukey HSD and the LSD follow-up tests. Since the assumption of homogeneity of variance was met in our example -we only need to review the Tukey HSD information. The information for the LSD can be ignored at this time.

We can see that this test indicates the differences in mean income levels amongst the groups.

The first row indicates the difference in income level between those in group 1 (up to 2 lakh) versus those who are in group 2 (2-5 lakh) and group 3 (5-10 lakh) and group 4 (55 lakh above). We can determine that the mean difference by examining the second column of the As we can see, there is not much difference between the two Mean Squares for investor psychology 25.207, 22.766 and regret aversion 16.245, 14.864, resulting in a no significant difference ( $F = 1.107$  investor psychology and 1.093 regret aversion; Sig. = 0.294 investor psychology 0.297 regret aversion). This means that  $H_0$  must not be rejected. Thus: the average age of people who find regret aversion, investor psychology, or Exciting are all equal.

## 14 XV. Conclusion

The casual study was based on a survey of 200 males and females investors belonging in different location of the Gwalior region. The variables of the study were the Investor Psychology, Regret Aversion. The objectives of the study were to identify the Factors affecting Investor Psychology and Regret Aversion & further to find relationship between Investor Psychology and Regret Aversion. The study resulted in four factors for Investor Pshycology viz Curezious and fearless, Distressed, Balance Decision making and Heuristic. Three factors were found for Regret aversion: Risk Averse, Risk Neutral and Risk Taking.

The result reveals that there is significant difference between investor psychology for age group category (I) 25 -35 and (IV) 55 -65 years. We can see here that there is a gradual change in the value system of people in India and people are now more concerned with quality life rather than economic achievement.

Previous research has shown differences in financial satisfaction by gender, though there were differences depending on what aspects of personal finance were measured ??Hira & Mugenda, 2000). As quoted by Woodyard and Robb (2012), Previous research ??Hilgert et al., 2003 ?? Lusardi & Mitchell, 2006, 2007) has shown that objective knowledge influences financial behavior, and the general assumption has been that there is a subsequent impact on financial satisfaction as well. Financial decisions are taken in situations of high complexity and uncertainty which compels the decision maker to rely on institution.

Several factors influence decision making. The conclusion drawn from this research lead to recommendations for a series of action which if adopted would help to establish the investor psychology which 1982; ??eelenberg, 1999a) "The Influence of Investor Psychology on Regret Aversion" decision making. Therefore, investor must recognize this fact and try to practice some mechanisms to control his (her) irrational behavior Based on the prospect theory of Kahneman and Tversky (1979), Shefrin and Statman (1985). The psychology effect implies that investors, in trying to avoid regret, will have a greater tendency to sell winners than losers. Investors will tend to hold losers too long and sell winners too soon. Therefore, investor must try to practice some mechanisms to control his (her) irrational behavior.



Figure 1: Montier ( 2002 )

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<sup>2</sup>"The Influence of Investor Psychology on Regret Aversion"

,  
de Vries (1996), negotiation behavior. Larrick & Boles,  
(1995), health-related decisions Connolly & Reb, (2003),  
lottery ticket purchases Zeelenberg & Pieters, (2004),  
and monetary gambles in the laboratory Zeelenberg,  
Beattie, van der Pligt, & de Vries, (1996), among others.

Figure 2: confirmed that regret is a common, if not universal, experience. Regret the persistence  
of the possible. Evidence for regret aversion has been documented in areas Richard, van der  
Pligt

"The Influence of Investor Psychology on Regret Aversion"	
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Global Jour- nal of Man- agement and Business Re- search	frame was used. Individual Respondent was the sampling element. 200 individ- uals including 100 male and 100 female investors were the respondents and Non probability judgmental sampling was used.
	Reliability Statistics of Investor Psychology Reliability Statistics Cronbach's Alpha N of Items .728 12 Cronbach's Alpha N of Items .723 8 Reliability Statistics
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Figure 3:

<p>           "The Influence of Investor Psychology on Regret Aversion" "The Influence of Investor Psychology on Re            3. Balance Decision making: -This factor has included the most important determinant of research total            variance 13.881. Major elements of this factor include            "R-5. I would rather achieve balance than success in            my life. (0.537)" "R-6 I like to make decisions quickly            and instinctively (0.370)".            4. Heuristic: -This factor has included the most            KMO and Bartlett's Test important determinant of research total variance            12.355. Major elements of this factor include. "R-2            Kaiser-Meyer-Olkin Measure of Sampling When things go wrong at work it takes me a while to get over            Adequacy. me. (0.299)". "R-8 Before buying a quiet expensive            60 Bartlett's Test of Bartlett's Test of Sphericity Df Sig. KMO and Bartlett's Test Approx. Chi-Square Ka            Year            2015            C Factor analysis of Investor Psychology Factor name Total eigen values % of variance 1.Curious and fear            (            )            Vol-            ume            XV            Is-            sue            II            Ver-            sion            I            Global Distressed 3. Balance Decision making 4. Heuristic Description of Investor Psychology factors 1.929            Jour-            nal            of            Man-            age-            ment            and            Busi-            ness            Re-            search         </p>		<p>           f) KMO test table for Regret Av            important determinant of research total            variance 16.076. Major elements of this fa            am someone who prefers routine            (0.369)." "R-7 I never upset peop            Occasionally people make me an         </p>	
<p>           most important determinant of research total            variance 17.081. Major elements of this factor include            "R-1. My style is more spontaneous action then cool            deliberation."(0.268). "R-9 I like to gather data a lot            on any new opportunities that arise."(0.408). "R-10 I            love taking chances. (0.383)" "R-11 Success is all            about that matters to me."(0.491).            © 2015 Global Journals Inc. (US) 1         </p>			

h) "The Influence of Investor Psychology on Regret Aversion  
Description of Regret Aversion Factor home  
in situ-  
ations  
where  
I am  
under  
in pres-  
sure  
to

1. Risk Averse: -This factor has included the most

important determinant of research total variance

27.889. . Major elements of this factor include. "R-13

whenever I make a choice, I'm curious about what

would have happened if I had chosen differently

(0.421)." "R-16 When I think about how I'm doing in

life, I often assess opportunities I have passed up.

(0.470)" "R-19 I find that to adopt a careful, analytical

approach to making decision takes too long (0.522)"

"R-20 I am always prepared to take a gamble.

(0.352)." applied  
to the  
data.

2. Risk Neutral: -This factor has included the most

important determinant of research total variance 17.390. Major elements of this fac

something of a failure if I find out that another choice

2. Risk Neutral would have turned out better. (0.422)" "R-18 I feel at 1.391 17.390 R-15. If I make a choice



:

"The Influence of Investor Psychology on Regret Aversion"

Gender

Hotelling's Trace	.002	.180
		b
Roy's Largest Root	.002	.180
		b
Pillai's Trace	.038	1.080
Wilks' Lambda	.963	1.077
		b

Age

Hotelling's Trace	.039	1.074
Roy's Largest Root	.031	1.743
		c

2015

Year Income

Pillai's Trace	.037	1.049
Wilks' Lambda	.964	1.043
		b

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Volumgender \* age  
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Hotelling's Trace	.037	1.037
Roy's Largest Root	.022	1.240
Pillai's Trace	.079	c
Wilks' Lambda	.923	2.309
Hotelling's Trace	.082	2.299
Roy's Largest Root	.053	b
Pillai's Trace	.036	2.290
Wilks' Lambda	.964	2.997
Hotelling's Trace	.037	c
		1.037
		1.036
		b
		1.035

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Multivariate Tests a Value F .986 5827.452 b Wilks' Lambda Pillai's Trace .014 5827

Jour- Intercept

nal age \* income  
of gender \* age \*  
Man- income

age-  
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a. Design: Intercept + gender + age + income + gender \*

Roy's Largest Root 69.374 5827.452 b age + gender \* income + age \* income + gender \* age \*  
income b. Ex- Pillai's Trace .002 .180  
act statistic b

Wilks' Lambda	.998	.180
		b

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[Note: c. The statistic is an upper bound on F that yields a lower bound on the significance level.]

Figure 6: Table :



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”The Influence of Investor Psychology on Regret Aversion”  
 1.00 XIV. Oneway Interpretation: for Gender as Categorical Variable 1.30 1.323 .327 -1.31  
 4.00

N  
 Mean

1.00

1.00 100 49.3800

Dependent Variable (I) income 2.00 Total 200 49.7350 Invphysco 2.00 100 50.0900

Tukey HSD

Tukey HSD regaversion regaversion 1.00 100 32.9100 1.00 2.00 3.00 4.00 2.00 100 33.4800 Total 200 33.1950

Invphysco

3.00 4.00 1.00 2.00 In the table 'ANOVA 2.00 4.00 1.00 2.00 3.00 2.00 3.00 4.00 1.00 3.00 4.00 Invphy LSD F



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